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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,345	07/25/2000	Paul Timothy Spivey	LE9-00-022	7549

21972 7590 05/12/2004

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EXAMINER

TRAN, LY T

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/625,345	SPIVEY ET AL.	
	Examiner	Art Unit	
	Ly T TRAN	2853	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-15, 17 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☐ Claim(s) 8-15, 17, 19-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art (Fig.1A-Fig.2B) in view of Wang et al. (USPN 6,209,993).

Prior Art discloses an ink jet print head comprising:

- A heater chip (Fig.2A: element 22);
- A substrate associated with the back side of the heater chip, the substrate having a substantially flat surface (Fig.2A: element 20);
- The heater chip is being glue to the substrate (Fig.2A, 2B: element 18 is an adhesive);
- The heater chip includes a plurality of ink vias (Fig.1b: element 12), the adhesive being configured for preventing fluid communication between plurality if ink vias.

However, Prior Art fails to teach the heater chip having a cavity and adhesive at least disposed within the at least one cavity and cavity comprises at least one trench.

Wang et al. teaches the heater chip with at least one cavity (Fig.2: element 108) and adhesive at least disposed within the at least one groove (Column 2: line 28-33) to prevent clogging the ink slot.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching Prior Art to have the groove/cavity on the heater chip as taught by Wang et al. The motivation of doing so is to prevent clogging the ink slot.

2. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art in view of Wang et al. (USPN 6,209,993) as applied to claim 5 above, further in view of Brandon et al. (USPN 5,751,324).

Wang teaches that the heater chip includes at least one outside edge (Fig. 2).

However, The combination of Prior Art and Wang et al fails to teach at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing.

Brandon et al. teaches at least one trench (Fig.4: element 44+46) extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing (Column 2: line 61-63).

While Brandon does not teach providing the trenches in a heater chip, it does provide the general teaching to one of ordinary skill in the art of providing trenches extending to at least one outside edge at a bonding site for the purpose of allowing the adhesive to outgas during curing.

It would have been obvious to one having skill in the art at the time the invention was made to modify the teaching of Sato and Harvey to have at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing as taught by Brandon et al. The motivation of doing so is the gas produced during of the adhesive is vented to the outside ambient environment.

Allowable Subject Matter

3. Claims 8-15, 17, 19 and 20-24 are allowed.

- The primary reason for the allowance of claim 8 is the inclusion of the limitation of an ink jet print head comprising adhesive substantially entirely disposed within at least one cavity, the adhesive adhering the backside of the heater chip to the substantially flat surface of the substrate. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.
- The primary reason for the allowance of claims 9-14 is the inclusion of the limitation of an ink jet print head comprising adhesive substantially entirely contained within at least one cavity, the adhesive adhering the backside of the heater chip to the substrate. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested

by the prior art of record which makes these claims allowable over the prior art.

- The primary reason for the allowance of claims 15, 17, and 19-21 is the inclusion of the limitation of an ink jet print head comprising a combination of the heater chip including a plurality of via, each of the at least one cavity surrounding a corresponding one of the plurality of via and at least one cavity being configured to reduce a width of a bond line between adjacent

via of the plurality of vias. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

- The primary reason for the allowance of claims 22-24 is the inclusion of the limitation of an ink jet print head comprising a combination of the heater chip including a plurality of via and a plurality of trenches, each via of the plurality of vias surrounding by a corresponding trench of the plurality of trenches and adhesive substantially entirely contained within each of the plurality of trenches, adhesive adhering the backside of the heater chip to the substantially flat surface of the substrate and the adhesive sealing to completely prevent a flow of ink between the plurality of vias. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

Response to Arguments

4. Applicant's arguments filed 3/19/2004 have been fully considered but they are not persuasive.

Applicant's argument that Wang does not disclose the redundant paste in overflow groove is used to adhere anything is not persuasive because in column 2; line 59-63 Wang discloses that when the print head chip adheres to the ink cartridge, redundant paste flows into the overflow groove. Therefore, the redundant paste is used to adhere first surface 10 of the substrate to the ink cartridge.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2853

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 571-272-2155.

The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

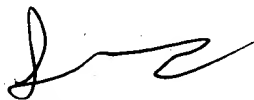
Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LT

May 6, 2004


Stephen D. Meier
Primary Examiner